

Recovery Plan Action Status

Plan Name: Tan Riffleshell Mussel

Plan Status: Final

Plan Date: 22-Oct-84

Lead Agency: USFWS

Lead Office: Asheville Ecological Services Field Office

(258-3939)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	1	1	Preserve the population and habitat of the species in the Middle Fork Holston River	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Endangered Species Division, The Nature Conservancy, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Management: Depredation Control, Management: Disease Control, Management: Habitat Maintenance and Manipulation, Management: Other, Management: Predator and Competitor Control, Management: Propagation, Management: Reintroduction	Contract, Graduate Student, Internal Field Assistance, Species Expert	*1. See general categories for Implementation Schedules. *2, Other agencies' responsibility would be of a cooperative nature or projects funded under a contract or grant program. In some cases contracts could be let to universities or private enterprises. *3. Note: Task costs have not been estimated for this plan. This species exists with other listed mussels in the same river systems. Thus, a task aimed at this species will benefit others. Rather than attempting to apportion the costs to each species, recovery tasks will be estimated at a later date when the plans are combined on a watershed basis for implementation. This population is now deemed marginal at best, and may already be extirpated. Currently, it is not being considered highly for recovery purposes.

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Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	1	1.1.1	Determine species' current distribution and range	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Research: Habitat Status, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	This subspecies was recently determined to actually represent two taxa. One is now restricted to the Big South Fork, Cumberland River system, TN/KY, while the other is essentially restricted to the Upper Clinch River system (Indian Creek), VA. If any other populations of the latter taxon exist (Middle Fork Holston River, VA; Hiwassee River, TN), they are extremely small and near extirpation.
Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	1	1.1.2	Describe species' habitat for all life history stages	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Research: Habitat Requirements	Contract, Graduate Student, Internal Field Assistance, Species Expert	Environmental requirements for early life history are being conducted while developing propagation technology (see Action 2).

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Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	1	1.1.3	Disseminate above information in form for general use by appropriate public and private agencies	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Endangered Species Division, The Nature Conservancy, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Other: Information and Education	Contract, Graduate Student, Internal Technical Assistance, Species Expert	
Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	1	1.2.1-1.2.2	Work with municipal, state, and Federal agencies to inventory on-going and proposed projects and evaluate their potential negative impacts on species and its habitat	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Research: Environmental Contaminants, Research: Habitat Status, Research: Other Information	Contract, Graduate Student, Internal Field Assistance, Species Expert	Coal mining activities are a major concern to both remaining populations. Current energy demands appear to be increasing, thus placing this species at greater risk of endangerment.
Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	1	1.2.3	Document the effects of apparent threats to the species and recommend corrective measures to appropriate agencies	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Management: Habitat Maintenance and Manipulation, Management: Other, Other: Administration, Other: Information and Education, Other: Law Enforcement, Other: Regulations, Research: Environmental Contaminants, Research: Other Information	Contract, Graduate Student, Internal Field Assistance, Species Expert	Project money continues to be allocated to determine the effects of coal mining activities on mussels. The Service and its partners are working with the mining industry and Federal regulators on ways to improve mining activities to help protect mussel habitat.

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Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	2	1.3.1-1.3.6	Solicit support for the mitigation or elimination of threats and for protection and recovery efforts	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Other: Information and Education	Contract, Graduate Student, Internal Technical Assistance, Species Expert	The Service is working with its partners in attempting to reduce threats from coal mining activities. Further, riparian habitat restoration work has been and continues to be conducted in the Clinch River system. These projects serve to reduce sedimentation and nutrients to this species' habitat. Outreach efforts to educate the public are being implemented during widely publicized cultured juvenile releases by the State of Virginia in the upper Clinch and to local officials in the Indian Creek watershed.
Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	1	2	Conduct life history research on the species	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Research: Competition, Research: Demographic Studies, Research: Disease, Research: Migration, Research: Other Information, Research: Predation, Research: Propagation, Research: Reintroduction	Contract, Graduate Student, Internal Field Assistance, Species Expert	Host fish have been determined. Some propagation technology has been conducted, but growout of juveniles to a size/age where predation is significantly reduced appears to be a recovery constraint. In 2006, 5 gravid females were found and used for streamside infestation of host fishes. Glochidia were pipetted from female brooding gills onto host fish gills. Both female mussels and infected host fishes were immediately released back into their habitat.

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Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	2	3.1	Locate sites for possible introduction which meet the species' survival and reproduction needs	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Research: Reintroduction	Contract, Graduate Student, Internal Field Assistance, Species Expert	~12 streams have been identified as potential reintroduction sites for the upper Tennessee River system form, and 4 streams for reintroduction for the Cumberland River form. This list may change depending on changes in habitat availability and threats.
Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	2	3.2-3.3	Develop successful methods for establishing new populations and implement	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Management: Propagation, Management: Reintroduction, Research: Propagation, Research: Reintroduction	Contract, Graduate Student, Internal Field Assistance, Species Expert	

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Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	2	4	Monitor Middle Fork Holston River and introduced populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Research: Habitat Status, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	See Action 1 for Middle Fork Holston River. In 2004 and 2005, cultured juveniles of the species were reintroduced into the upper Clinch River in a reach the species was eliminated from following a 1998 chemical spill. Biologists will be monitoring this reintroduction, but the young are still too small to detect and evaluate for success. A Similar reintroduction of juveniles into the Hiwassee River took place in 200, but there has been no sign of survival. The Indian Creek population has been augmented by lab-cultured juveniles in an effort to improve its population status.
Tan riffleshell (Epioblasma florentina walkeri (=E. walkeri))	3	5	Evaluate success of individual activities and recommend changes in strategies	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, Tennessee Valley Authority , USFWS Regional Office 4 - Atlanta, USFWS Regional Office 5, Virginia Water Control Board, Virginia Commission of Game and Inland Fisheries	Other: Administration	Internal Administrative	Propagation technology continues to be fine-tuned, particularly in regards to juvenile growout (see Action 2).